



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,916	12/08/2003	Minehiro Tonosaki	246219US6	9663
22850	7590	04/06/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MCKINNON, TERRELL L	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/728,916

Applicant(s)

TONOSAKI ET AL.

Examiner

Terrell L. Mckinnon

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

Receipt is acknowledged of applicant's amendment filed January 17, 2006. Claim 1-10 has been canceled without prejudice. Claims 11-41 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 11-41 have been considered but are moot in view of the new grounds of rejection.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 11, 12, 14-18, 20-24, 25-32 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Kirshberg et al. (U.S. 2003/0066625).

Kirshberg discloses a micro-capillary pumped loop cooling system and method of manufacturing comprising:

- a refrigerant;
- an evaporator formed between a glass and a substrate;
- a condenser formed between a glass and a substrate [0008];
- a liquid passage linking the evaporator and condenser configured to allow the refrigerant to flow from the condenser to the evaporator;
- a gas passage linking the evaporator and condenser configured to allow the refrigerant to flow from the evaporator to the condenser; and
- a wick being included in one of the evaporator, the condenser, the liquid passage, or the gas passage, wherein the glass and/or the substrate is covered with a stable material ([0007] and [0018]).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13, 19, 33 and 35-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirshberg et al. (U.S. 2003/0066625) in view of Schutt et al. (U.S. 2002/0102417).

Kirshberg's invention discloses all of the claimed limitations from above except for the stable material is selected from the group consisting of SiO<sub>2</sub>, SiN, SiC and combination thereof; the stable material is present only on the surface of the wick; the stable material is formed by chemical vapor deposition; and the stable material blocks the migration of an alkaline component from the glass and/or substrate into the refrigerant.

However, Schutt teaches the use of a Silane based protective coating used to blocks the migration of an alkaline component from HVAC (refrigeration systems) ([0003], [0005], [0010] and [0021]), also a variety of method of applying the coating and different Silicon based coating material combinations.

Given the teachings of Schutt, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the micro-capillary pumped loop cooling system of Kirshberg with for the stable material is selected from the group consisting of SiO<sub>2</sub>, SiN, SiC and combination thereof; the stable material is present only on the surface of the wick; the stable material is formed by chemical vapor deposition; and the stable material blocks the migration of an alkaline component from the glass and/or substrate into the refrigerant.

Doing so would provide increased structure strength to the cooling system to improve the cooling performance of the system.

### ***Response to Arguments***

Applicant's arguments filed January 17, 2006 have been fully considered but they are moot in view of the new grounds of rejection as stated above.

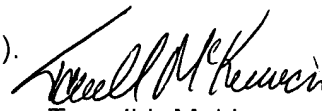
### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references cited on the USPTO 892 discloses related limitations of the applicant's claimed and disclosed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L. Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Terrell L Mckinnon  
Primary Examiner  
Art Unit 3753  
April 3, 2006